BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An Open Forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

THE STUDY OF THE PROBLEMS OF STERILITY (NONFERTILITY)—A REVISED CLASSIFICATION

EARL W. WELLS, LOS ANGELES.—Physicians in general agree that there exists at the present time a great need for better and more complete study of the problems of nonfertility. Within the last decade there has been a tremendous advancement in our knowledge of the causes of sterility in both man and woman.

In 1902 Kelling inflated the abdominal cavity with filtered air and attempted to investigate the adnexae by means of a cystoscope. The use of the x-ray was obviously indicated from its wide field of usefulness in other medical specialties. In 1913 Weber used oxygen to inflate the abdominal cavity and reported upon pneumoperitoneal x-ray methods. Carey in 1914 demonstrated the patency of the fallopian tubes by injecting a solution of collargol through the uterine cavity. He was impressed with this nonoperative method and reported that he was able to diagnose the patency of one tube and the occlusion of the other. Isadore Rubin in 1920 reported a series of fifty cases in an article entitled "Nonoperative Determination of the Patency of the Fallopian Tubes by the Inflation of Oxygen Through the Cervix." Since that time the diagnostic procedure has received wide recognition; the technique, the indications, the contraindications, pelvic pain, shoulder pain, pneumoperitoneum, have all been widely studied. The usage of various gases, opaque emulsions and metallic solutions, have received great investigation in many hands. At the Woman's Hospital in New York City there was established a large clinic in the out-patient department solely to study this phase of sexual dysfunction, and very careful investigations, including peruterine gas insufflation tests, were made on over one thousand sterile women. Such records serve to impress us with the fact that while the advent of women into the business world has brought about the need for contraceptives, still, there exists today, as always, that great fundamental requirement of nature, the desire for reproduction.

Any couple who has lived according to the marital laws—the wife a virgin at the time of her marriage, the husband patent and free from venereal infection—has a right to demand of the modern doctor a searching investigation for the cause of their nonfertility. In the past the solution of such a medical problem has proved a very difficult one for the physician. The history was usually negative; the physical examination frequently revealed only a normal appearing introitus, the cervix looked normal, uterus in fair position, and he could feel no mass in either adnexae. He had honestly to admit that he could find no cause for their sterility and he certainly could offer no hope. It is with the humble hope that we physicians of today, building upon the excellent foundation of this recent research, may be of more service to humanity that I present this revised classification. It is in outline form so as to be brief and to the point.

Definition—Inability to conceive or impregnate.

A marriage is considered sterile where no pregnancy has occurred within three years in the absence of use of contraceptives.

Etiology—Male: General history and physical examination.

1. Sexual activity and examination: Genitalia, prostate, etc. (endoscope).
2. Semen specimen; examine within two hours; gross characteristics; microscopic with low and H. P. on warm stage; activity. Stained specimen.
3. Huhner's test: Examine spermatic specimen taken from inside cervix four to eight hours after intercourse microscopically on warm stage.

Activity:

1. Active normal spermatozoa absolves the husband.
2. Vaginal and cervical secretions not inimical to spermatozoa.

Absence of spermatozoa-Azoöspermia: Must examine further specimens from husband; condom or bottle specimens.

Inactive or necrospermia:

Live sperm may have been killed by acid secretion or lytic action of female discharge—obtain specimen from "seminal pool" in posterior fornix within hour after coitus.

When husband is absolved, classify female causation:

Female:

I. Primary Sterility — Conception has never occurred.
   A. General Causes:
      1. Congenital—disturbances of endocrine system.
         a. Myxedema.
         b. Acromegaly.
         c. Other endocrinopathic states.
      2. Acquired—also may include endocrine factors and occur shortly after onset of puberty.
         a. Obesity.
         b. Chlorosis.
         c. Diabetes.
         d. Exophthalmic goiter (Grave's disease). Often in early stage.
         e. Chronic nephritis—albuminuria has a marked deterring effect.
         f. Syphilis—Mainly a factor in abortions and stillbirths.
         g. Tuberculosis—general changes in blood and nutrition.
         h. Other infectious diseases—mumps and scarlatina damage ovaries.
         i. Chronic intoxications (lead, morphin, etc.), amenorrhea.
   B. Local Causes:
      1. Congenital.
         a. Malformations and defective reproductive organs.
         b. Infantilism — arrested development or hypoplasia of reproductive organs, atresia; stenosed or pin-hole cervix; dysmenorrhea.

c. Tumors—fibroids, carcinoma, etc.
d. Hymen — occluded entrance; fibrous rigidity.

2. Acquired.
a. Gonorrhea.
b. Tuberculosis, inflammatory changes in tubes, ovaries, peritoneum.
c. Catarrhal conditions — normal alkaline mucous plug of Kristellar changed by infections producing acidity; irritations produced by strong douches and contraceptives in endocervix and tubes.
d. Displacements.
e. Traumatic or operative (including raditions).

II. Secondary (one child) Sterility—Nonfertility following a pregnancy more than three years previously in absence of use of contraceptives.
A. Infections.
1. Abortal and puerperal sepsis.
2. Gonorrhea.
3. Subinvolution—often overlooked.
B. Traumatisms.
1. Perineal and cervical lacerations—semen not mechanically retained.
2. Urinary fistula, etc.
C. Displacements, frequency after first pregnancy; rôle of faulty obstetrics.
D. Atrophy of uterus.
E. Operative—including radiations.

III. Functional Disturbances.
A. Frigidity.
1. Ab libido—absence of desire; congenital or acquired.
2. Ab voluptas—absence of orgasm.
B. Dyspareunia.
1. Psychical—aversion to husband or pregnancy.
2. Physical—pain extinguishes desire; vaginismus.
C. Effluvium seminis—semen expelled by an involuntary or reflex spasm of muscles occurring in hysterical or neurotic women.
D. Genital spots of Fliess—Anterior half of lower turbinate and the tubercle of septum; cocainize, cauterize. Frequently associated with backache or dysmenorrhea.

Treatment—Depends on causation. Aims — corrections of defects; cure of pathology; stimulation of genitalia.
A. Of General Causes: Restoration to normal; exercise, diet, drugs, blood transfusion, ultraviolet radiation.
B. Of Local Causes:
1. Introitus—correction of defects, sensitivity, vaginismus.
2. Cervical.
a. Endocervicitis—treatment as indicated.
b. Mucous secretions—drugs, electrotherapy, suction, tamponage.
c. Occlusion—dilation where indicated.
d. Surgical—repairs, incisions, cautery, etc.
3. Uterus.
a. Displacements—manual, pessaries, surgical.
b. Diagnostic curettage where indicated.
c. Myomectomies.
d. Stimulation—drugs, electrotherapy.
4. Tubes.
a. Peruterine insufflation.
Diagnostic: Definite technique required; signs and symptoms.
Therapeutic: Balloons out tubes; to overcome spasm, stricture, remove mucous, stimulate peristalsis. Use three to five days after each menstrual period on four to six consecutive months.
b. Uterosalpingography — great value following gas insufflation as visualizes uterus and tubal condition.
c. Surgical — salpingostomy, followed by uterine insufflations.
5. Ovaries.
a. Medicinal and electrotherapy treatments may stimulate.
b. Ultraviolet and x-ray stimulation radiation.
c. Surgical—remove adhesions, pathology; correct displacements.

C. Special Measures.
1. Stimulation of genitalia—hot douches, Seitz baths, etc.
2. Electrotherapy—diathermy, faradic, ultraviolet, x-ray.
3. Drugs—general and local uses; endocrine therapy still too indefinite and haphazard except for special indications.
4. Blood transfusions: for ovarian hormone. May be obtained from healthy female donor in premenstrual-menstrual phase or hormone obtained after method of Robert T. Frank.
5. Artificial insemination (peruterine method).

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HENRY N. SHAW, LOS ANGELES.—I think that Doctor Wells has given us an excellent outline of the steps necessary to determine the possibility of a pregnancy. In fact it would be a valuable thing to keep such a concise presentation of the problem in our offices to show the patients who come to us for advice.

I especially approve of the fact that he takes up, first, the male side of the problem. It is surprising how many husbands are willing to have very extensive studies made on their wives, from Rubin tests to abdominal operations, but those same individuals will not even allow an examination of their own semen. I always explain that the husband should be examined first, and in three cases the wife has come back later and explained that her husband felt he could not stand the shock of finding that he was impotent.

There are certain cases where the various adverse factors covered in Doctor Wells' outline can be ruled out, and yet the woman does not become pregnant. It has occurred to me that this might be explained by a study of the blood grouping of the individuals. Where a husband and wife are in the same group, the male semen might live in the female serum, around the ovary, for several days. According to recent observations by Pratt, Allen, and Newell, the ovary puts out one ovum a month, usually from about the twelfth to fourteenth day after the close of a menstrual period. Depending on the relations of the husband's and wife's blood groups, the male spermatozoön would live a longer or shorter time. If they belonged to absolutely opposite groups, the male cell would be destroyed before it crossed the uterine cavity. In other groups it might live from several minutes to several hours. For impregnation to take place, ovulation would have to occur practically at the time of arrival of the spermatozoa in the region of the ruptured follicle.

This would explain cases where apparently normal mates, who had had no children, separate, remarry, and both have children. It would explain single pregnancies, or pregnancies at widely separated intervals.